



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,878	08/22/2005	Sotiris Koussios	Tech-21/RCE(P61151US00)	4430
7265                      7590                      12/21/2010 MICHAELSON & ASSOCIATES P.O. BOX 8489 RED BANK, NJ 07701-8489				
EXAMINER				
BRADEN, SHAWN M				
ART UNIT		PAPER NUMBER		
3781				
MAIL DATE		DELIVERY MODE		
12/21/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/523,878

**Applicant(s)**

KOUSIOS ET AL.

**Examiner**

SHAWN M. BRADEN

**Art Unit**

3781

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-28 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) 45-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-28, 39-44 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-944)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

1. Newly submitted claims 45-48 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: They are drawn to different embodiments and applications that where not previously presented. Applicant reference that these claims where withdrawn by mistake, but they are different embodiments that where not previously presented, they would require a different field of search and would be a burden for the examiner.
2. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 45-48 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 23,28 recites the limitation "the radius" in line 8. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-28,39-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over SASAJIMA, YOICHI (JP 58181668) in view of Peters (USPN 4,701,231).

Yoichi discloses the invention substantially as claimed.

Yoichi shows Claim 23, an integrally formed gas or fluid-tight body (1) having a continuous outer circumferential surface with a rotation-symmetrical axis that terminates in axial ends, the body being overwound (fig. 3) with one or more fiber filaments (13), the fiber filaments having a longitudinal axis defined along their length, wherein the radius of the body outer surface varies with respect to the rotation-symmetrical axis, such that said body outer surface defines at least one concave surface section (near 2) spaced apart from the axial ends, wherein each concave surface section has a local minimum radius (between the ridges), and the outer surface further defines at least one convex surface section (the peaks of the ridges) spaced apart from the axial ends, wherein each convex surface section has a local maximum radius (at the peaks), wherein the at least one concave surface section about its entire outer surface spanning its local minimum radius is continuously over wound with a fiber filament (13).

Yoichi shows claim 25, wherein the pressurizable structure is quasi-geodesically overwound in a continuous fashion (Yoichi shows in fig. 1 a curved surface that meets the definition below).

**Geodesic in Collins English Dictionary**

1. adjective Also: geodetic, geodesical. relating to or involving the geometry of curved surfaces. 2. noun Also called: geodesic line. the shortest

Yoichi shows claim 26, wherein the longitudinal orientation of the fiber filament (13)

along a finite length thereof is oriented substantially perpendicular with respect to the rotation-symmetrical axis of the structure (fig. 3).

Yoichi shows claim 27, wherein the fiber filaments (13) undergo torsion with respect to the longitudinal center-line thereof when the pressurizable structure is in a pressurized state, whereby substantially one side of the curved fiber circumference remains in contact with the body in the at least one concave surface section (fig. 6 shows that one side of layer (6) is in contact with the body).

Yoichi shows claim 28, characterized in that comprising an integrally formed gas or fluid-tight body (1) having a continuous outer circumferential surface with a rotation-symmetrical axis that terminates in axial ends, the body being overwound with one or more fiber filaments (13), the fiber filaments having a longitudinal axis defined along their length, wherein the radius of the body outer surface varies with respect to the rotation-symmetrical axis, such that said body outer surface defines at least one concave surface section spaced apart from the axial ends, wherein each concave surface section has a local minimum radius, and the outer surface further defines at least one convex surface section spaced apart from the axial ends, wherein each convex surface section has a local maximum radius, wherein the at least one concave surface section about its entire outer surface spanning its local minimum radius is continuously overwound with a fiber filament (13).

Yoichi shows claim 39, wherein the body is flexible, i.e., non-rigid, and formed about the fiber filaments (the fibers are shown flexing in fig. 3).

Yoichi shows claim 40, whereby the axial length of at least one axial section of the pressurizable structure is variable with respect to the longitudinal axis of the pressurizable structure (that is why the ridges are placed in the tube, to flex and stretch to absorb movement).

Yoichi shows claim 41, wherein at least one axial section of the pressurizable structure is pivotable with respect to the longitudinal axis of the pressurizable structure (that is why the ridges are placed in the tube, to flex and stretch to absorb movement).

Yoichi shows claim 42, wherein at least one axial section of the structure is pivotable with respect to an axis, wherein the axis is orthogonal to the longitudinal axis of the pressurizable structure (that is why the ridges are placed in the tube, to flex and stretch to absorb movement).

Yoichi shows claim 43, wherein at least one axial section of the pressurizable structure comprises a combination of at least two of the following technical elements; (i) at least one axial section of the pressurizable structure is pivotable with respect to the longitudinal axis of the pressurizable structure; (ii) the axial length of the at least one axial section of the structure is variable with respect to the longitudinal axis of the pressurizable structure; (iii) the axial section of ii the structure is pivotal with respect to an axis, wherein the axis is orthogonal to the longitudinal axis of the pressurized structure (the ridges of Yoichi allow for pivoting in all direction, and stretching and compressing).

Yoichi shows claim 44, wherein the pressurizable structure comprises an array of a plurality pipelines (fig.1).

However Yoichi does not disclose claims 23,28, the body being overwound as an isotensoide, Claim 24, wherein the fiber filaments overwinding the at least one concave surface section comprise a plurality of substantially straight fiber filaments forming a hyperboloid, Claim 28, the fiber filaments are twisted longitudinally during fabrication of the structure so that one circumferential side of the fiber filaments are in contact with the at least one concave surface section and the other circumferential side of the fiber filaments are in contact with the at least one convex surface section.

Peters teaches claims 23,28, the body being overwound as an isotensoide (col 4 line 64) , Claim 24, wherein the fiber filaments overwinding the at least one concave surface section comprise a plurality of substantially straight fiber filaments forming a hyperboloid (fig. 3 and described in col 4 line 65) , Claim 28, the fiber filaments are twisted longitudinally during fabrication (col 4 line 13-15 describe rotating the fiber to make a curved surface) of the structure so that one circumferential side of the fiber filaments are in contact with the at least one concave surface section and the other circumferential side of the fiber filaments are in contact with the at least one convex surface section in the same field of endeavor for the purpose of having a container that has the same strength at all surfaces, this also allow for even material usage with no thick areas that waste material.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use and isotensoide wrapping technique with a twist around the curves of Yoichi in order to in order to have equal stresses in the fiber filament of Yoichi as taught by Peters.

***Response to Arguments***

6. Applicant's arguments with respect to claims 23-28,39-44 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHAWN M. BRADEN whose telephone number is (571)272-8026. The examiner can normally be reached on Mon-Friday 9-6:30 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571)272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anthony Stashick/  
Supervisory Patent Examiner, Art  
Unit 3781



Application/Control Number: 10/523,878  
Art Unit: 3781

Page 8

/Shawn M Braden/  
Examiner, Art Unit 3781